09/926427

PCT/CA01/00238

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 20 November 2001 (20.11.01)	
International application No. PCT/CA01/00238	**Applicant's or agent's file reference** T8466296WO
International filing date (day/month/year) 01 March 2001 (01.03.01)	**Priority date** (day/month/year) 01 March 2000 (01.03.00)
Applicant SPICER, Steven et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

29 September 2001 (29.09.01)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Paulette BOCCARD (Fax 338.87.40)
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

2150

PATENT COOPERATION TREATY

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From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and Administrative Instructions, Section 422)

To:

RECEIVED
MAR 0 6 2002
Technology Center 2100

GRAHAM, Robert, J.
Gowling Lafleur Henderson LLP
Suite 4900
Commerce Court West
Toronto, Ontario M5L 1J3
CANADA

Date of mailing (day/month/year)
04 décembre 2001 (04.12.01)

Applicant's or agent's file reference
T8466296WO

IMPORTANT NOTIFICATION

International application No.
PCT/CA01/00238

International filing date (day/month/year)
01 mars 2001 (01.03.01)

1. The following indications appeared on record concerning:

[X] the applicant [X] the inventor [ ] the agent [ ] the common representative

Name and Address
MARTIN, Christopher
86 Mooregate Crescent
Apt. 1304
Kitchener, Ontario N2M 5E6
Canada

State of Nationality: CA
State of Residence: CA
Telephone No.:
Facsimile No.:
Teleprinter No.:

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

[ ] the person [ ] the name [X] the address [ ] the nationality [ ] the residence

Name and Address
MARTIN, Christopher
66 Mooregate Crescent
Apt. 1304
Kitchener, Ontario N2M 5E6
Canada

State of Nationality: CA
State of Residence: CA
Telephone No.:
Facsimile No.:
Teleprinter No.:

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

[X] the receiving Office
[ ] the International Searching Authority
[X] the International Preliminary Examining Authority
[ ] the designated Offices concerned
[X] the elected Offices concerned
[ ] other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer
Jean-Marc VIVET (Fax 338.87.40)

Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
T8466296WO		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/CA 01/ 00238	01/03/2001	01/03/2000
Applicant		
SPICER CORPORATION et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language,** the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 2

   [X] as suggested by the applicant.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

   [ ] None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 01/00238

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L12/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SITAO W ET AL: "USING DEVICE DRIVER SOFTWARE IN SCADA SYSTEMS" 2000 IEEE POWER ENGINEERING SOCIETY. WINTER MEETING. CONFERENCE PROCEEDINGS. SINGAPORE, JAN. 23-27, 2000, IEEE POWER ENGINEERING SOCIETY WINTER MEETING, NEW YORK, NY: IEEE, US, vol. 3 OF 4, 23 January 2000 (2000-01-23), pages 2046-2049, XP000967795 ISBN: 0-7803-5936-4 abstract page 2046, right-hand column, line 21 -page 2047, right-hand column, line 5 page 2048, left-hand column, line 3 -page 2049, left-hand column, line 8; figure 6 --- -/--	1,6

[X] Further documents are listed in the continuation of box C.

[ ] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
1 November 2001	08/11/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Adkhis, F

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Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 01/00238

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	LEMON S ET AL: "AN OBJECT ORIENTED DEVICE DRIVER MODEL" DIGEST OF PAPERS. COMPCON, XX, XX, 1995, pages 360-366, XP000566086 abstract page 363, left-hand column, line 26 -page 365, left-hand column, line 14	1,6

1

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
T8466296WO		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/CA01/00238	01/03/2001	01/03/2000
International Patent Classification (IPC) or national classification and IPC H04L12/24		
Applicant SPICER CORPORATION et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
28/09/2001	18.07.2002
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Hamer, J Telephone No. +49 89 2399 8827

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/CA01/00238

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-18	as originally filed			
19	as received on	24/06/2002	with letter of	24/06/2002

Claims, No.:

1-9	as received on	24/06/2002	with letter of	24/06/2002

Drawings, sheets:

1/5-5/5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-9
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-9
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations
   see separate sheet

V- Reasoned Statement

1. The following documents are cited:

   D1: SITAO W ET AL: 'USING DEVICE DRIVER SOFTWARE IN SCADA SYSTEMS' 2000 IEEE POWER ENGINEERING SOCIETY. WINTER MEETING. CONFERENCE PROCEEDINGS. SINGAPORE, JAN. 23-27, 2000, IEEE POWER ENGINEERING SOCIETY WINTER MEETING, NEW YORK, NY: IEEE, US, vol. 3 OF 4, 23 January 2000 (2000-01-23), pages 2046-2049, XP000967795 ISBN: 0-7803-5936-4

   D2: LEMON S ET AL: 'AN OBJECT ORIENTED DEVICE DRIVER MODEL' DIGEST OF PAPERS. COMPCON, XX, XX, 1995, pages 360-366, XP000566086

2. The subject-matter of claim 1 of the present invention is concerned with a network resource communication system for facilitating communication over a network between a network terminal and a network resource. In a network such as the Internet, computer resources are distributed throughout the network. Printers can now be accessed using Internet Print Protocol, but few such resources are IPP compliant. Access to such resources can only be changed on a per resource basis and users must have the correct resource driver and know the IPP address of the resource. This is true for each different resource a user may wish to access and must be changed if the resource type or address changes.

   Document D1 is concerned with an OPC solution for a SCADA system. Device drivers are stored centrally in a server, but the devices themselves are unchanging. Thus, if a user wishes to use a resource, the appropriate driver can be accessed from the server. In D2, when device drivers are bing developed, a central database is accessed and provides objects required for the driver. This happens once at run time or when a device is first installed.

   In claim 1, flexibility is introduced by having a driver administrator which receives resource data associated with the network resource from a resource registry following a communication request from software application at a network terminal. Thus a network terminal can maintain communication with a network

resource, even if the device characteristics of the network change. This means that information concerning e.g. network address, device type , password information etc. can be managed easily, efficiently and securely, away from the resource itself. The features of claim 1 are found nowhere in the available prior art documents. As a result, the subject-matter of claim 1 involves an inventive step and claim 1 meets the requirements of Article 33(2) and (3) PCT.

3. The subject-matter of independent claim 6 is essentially the same as that of claim 1, but expressed in terms of apparatus features. Thus for the same reasons outlined above, claim 6 also meets the requirements of Articles 33(2) and (3) PCT.

4. The subject-matter of dependent claims 2 to 5 and 7 to 9 includes features which further restrict the scope of claims 1 and 6 respectively. As a result; these claims also meet the requirements of Articles 33(2) and (3) PCT.

5. The following deficiencies are also found in the application:

a) The claims do not meet the requirements of Rule 6.2(b) PCT in that they do not contain reference signs.
b) The independent claims do not meet the requirements of Rule 6.3(b) PCT in that they are not divided into the two-part form.
c) The documents cited in the International Search Report should have been referenced and briefly discussed in the description, Rule 5.1(a)(ii), PCT.
d) The description should have been modified to bring it into agreement with the modified independent claims, Rule 5.1(a)(iii), PCT.

authorization password associated with the network resource 104, the resource administrator need only update the pseudo-name and authorization password provided on the resource record 300. Subsequently, when a user of a network terminal 200 initiates communication with the network resource 104 using the original pseudo-name, the authorization server 110 scans the resource records 300 for occurrences of the original pseudo-name. After locating the appropriate resource record 300, the authorization server 110 provides the driver administrator layer 408 with the updated pseudo-name and authorization password of the network resource 104, provided that the network terminal 200 is still authorized to communicate with the network resource 104. A network terminal 200 which is not authorized to communicate with the network resource 104 will not receive the updated pseudo-name and authorization password from the authorization server 110 and, consequently, will not be able to communicate with the network resource 104, even if the user of the network terminal 200 knew the network address for the network resource 104.

The foregoing description is intended to be illustrative of the preferred embodiment of the present invention. Those of ordinary skill may envisage certain additions, deletions and/or modifications to the described embodiment which, although not explicitly described herein, are encompassed by the scope of the invention, as defined by the claims appended hereto.

WE CLAIM:

1. A network resource communication system for facilitating communication over a network between a network terminal and a network resource, the network resource communication system comprising:

a network resource driver for facilitating communication of application data with the network resource, the resource driver including a driver input for receiving the application data from a software application resident on the network terminal, and a driver output for providing a translation of the received application data;

a driver administrator in communication with the software application and being configured for communication with a resource registry and for receiving from the software application an indication of the network resource, the resource registry including resource data associated with the network resource, the driver administrator being further configured to provide the resource registry with the network resource indication and to receive from the resource registry the associated resource data; and

a data transmitter in communication with the driver output and the driver administrator and being configured to transmit the translated application data over the network to the network resource in accordance with the received resource data.

2. The network resource communication system according to claim 1, wherein the resource data identifies a network address associated with the network resource.

3. The network resource communication system according to claim 1, wherein the data transmitter is configured for encrypting the translated data prior to transmission to the network resource.

4. The network resource communication system according to claim 1, wherein the resource data identifies a password associated with the network resource for accessing the network resource.

5. The network resource communication system according to claim 4, wherein the data transmitter is configured to encrypt the password together with the translated data, and to transmit the encrypted data to the network resource.

6. A method for facilitating communication over a network between a network terminal and a network resource, the method comprising the steps of:

receiving at a driver layer resident on the network terminal a request for communication with the network resource, the communication request including an indication of the network resource;

transmitting the network resource indication from the driver layer to a resource registry, and receiving therefrom resource data associated with the network resource; and

directing application data received at the driver layer to the network resource in accordance with the received resource data.

7. The method according to claim 6, wherein the resource data comprises a network address associated with the network resource, and the directing step comprises transmitting the application data to the network address.

8. The method according to claim 6, wherein the resource data comprises a password associated with the network resource for accessing the network resource, and the directing step comprises transmitting the password to the network resource together with the password.

9. The method according to claim 8, wherein the directing step comprises the steps of encrypting the password together with the application data, and transmitting the encrypted data to the network resource.

09926.437

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 September 2001 (07.09.2001)

PCT

(10) International Publication Number
WO 01/65771 A3

(51) International Patent Classification[7]: H04L 12/24

(21) International Application Number: PCT/CA01/00238

(22) International Filing Date: 1 March 2001 (01.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,299,824 1 March 2000 (01.03.2000) CA

(71) Applicant *(for all designated States except US)*: **SPICER CORPORATION** [CA/CA]; 221 McIntyre Drive, Kitchener, Ontario N2R 1G1 (CA).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SPICER, Steven** [CA/CA]; 119 Champlaine Crescent, Kitchener, Ontario N2B 2Y7 (CA). **MARTIN, Christopher** [CA/CA]; 66 Mooregate Crescent, Apt. 1304, Kitchener, Ontario N2M 5E6 (CA). **COUTTS, Steven** [CA/CA]; 99 John Street, Waterloo, Ontario N2L 1C2 (CA). **KUHL, Larry** [CA/CA]; 686 Jacob Lane, Waterloo, Ontario N2V 1G9 (CA). **HOLLANDER, Brian** [CA/CA]; 99 Julia Crescent, Kitchener, Ontario N2E 3M7 (CA). **PIDDUCK, Patrick** [CA/CA]; 267 Castlefield Avenue, Waterloo, Ontario N2K 2M4 (CA). **VON HATTEN, Philip** [CA/CA]; 2240 Walker Road, New Hamburg, Ontario N0B 2G0 (CA). **LEHAN, Tim** [CA/CA]; 168 Samual Street, Kitchener, Ontario N2H 1R1 (CA). **ONISCHKE, Mark** [CA/CA]; 220-150 Country Hills Drive, Kitchener, Ontario N2E 3H2 (CA). **GRASSICK, Clayton** [CA/CA]; 15 Cambrian Crescent, Winnipeg, Manitoba R3R 1Y3 (CA).

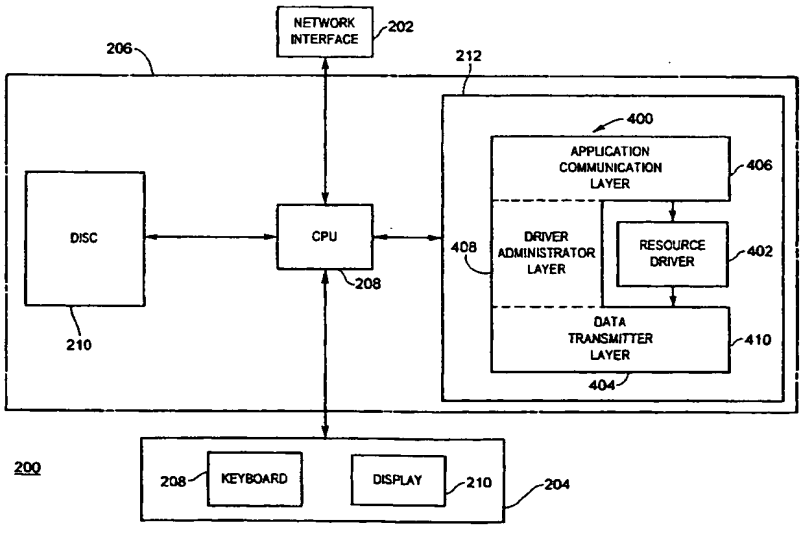
(74) Agents: **GRAHAM, Robert, J.** et al.; Gowling Lafleur Henderson LLP, Suite 4900, Commerce Court West, Toronto, Ontario M5L 1J3 (CA).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian

[Continued on next page]

(54) Title: NETWORK RESOURCE COMMUNICATION SYSTEM



(57) Abstract: A network resource communication system facilitates communication over a network between network terminals and network resources, and comprises a network resource driver, a driver administrator, and a data transmitter. The network resource driver facilitates communication of source data between the network terminals and one of the network resources, and includes a driver input for receiving the source data and a driver output for providing a translation of the source data in accordance with the network resource. The driver administrator is in communication with a resource registry, and includes resource records associated with the network resources. The resource records define at least a resource type for each network resource, and the driver administrator is configured to configure the network resource driver in accordance with the resource record associated with the network resource. The data transmitter is in communication with the driver output for transmitting the translated data to the network resource.

WO 01/65771 A3

patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
28 March 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.